In the Claims

1-43. (cancelled)

44. (currently amended) A method of generating a chromatic dispersion signal indicative of the chromatic dispersion exhibited by an optical path along which an optical signal has been transmitted, the optical signal having been generated by a method comprising the modulation of an optical carrier with an RF data signal having frequency components across an RF data spectrum such that data is carried by the optical signal in upper and lower sidebands on either side of an optical carrier frequency, the method comprising the steps of:

receiving the optical signal;

~~deriving an RF signal having a narrow bandwidth within the RF data spectrum from corresponding optical frequencies in the upper and lower sidebands of the received optical signal;~~

~~detecting the power of the derived RF signal;~~

~~using a magnitude of the detected power as, or to generate, the dispersion signal.~~

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deriving a plurality of RF signals, each having a respective narrow bandwidth within the RF data spectrum, from respective corresponding optical frequencies in the upper and lower sidebands of the received optical signal;

detecting a respective power of each derived RF signal; and

using the magnitude of the detected powers to generate the chromatic dispersion signal.

45. (cancelled)

46. (currently amended) A method in accordance with claim ~~45~~ 44, wherein said step of deriving a plurality of said RF signals comprises deriving first, second, and third RF signals having bandwidths centred on relative frequencies f, $\sqrt{2}$ f, and 2f respectively.

47. (currently amended) A method in accordance with claim 44 further comprising the step of optically filtering the received optical signal with a filter having a bandwidth less than an optical bandwidth of the received data modulated signal, before deriving the plurality of RF signals.

48. (original) A method in accordance with claim 47, wherein the optical signal has been generated by a method comprising the modulation of the optical carrier with a clock signal, and the step of optically filtering comprises the removal of optical frequencies arising from said modulation with the clock signal.

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49. (currently amended) A method in accordance with claim 44, further comprising the step of:

tapping off a portion of the received signal, and wherein the plurality of RF signals are ~~is~~ derived from the tapped portion.

50. (currently amended) A method in accordance with claim 44, wherein the step of deriving the plurality of RF signals comprises:

supplying at least a portion of the received optical signal to a photodiode, and

~~filtering~~ splitting a signal generated by the photodiode into a plurality of generated signals and filtering each generated signal with a narrowband RF filter.

51. (previously presented) A method of compensating for chromatic dispersion exhibited by an optical path along which an optical signal has been transmitted, the optical signal having been generated by a method comprising the modulation of an optical carrier with an RF data signal having frequency components across an RF spectrum, such that data is carried by the optical signal in upper and lower sidebands on either side of an optical carrier frequency, the method comprising the steps of:

generating a chromatic dispersion signal in accordance with the method of claim 44;

supplying at least a portion of the received optical signal to a device exhibiting adjustable chromatic dispersion;

using said chromatic dispersion signal to control the adjustable chromatic dispersion device to exhibit chromatic dispersion which at least partially compensates for the chromatic dispersion exhibited by said optical path.

52. (currently amended) A method in accordance with claim 51, wherein the step of generating the chromatic dispersion signal comprises:

tapping off a portion of the received signal before it is supplied to the adjustable chromatic dispersion device, and the plurality of RF signals are ~~is~~ derived from the tapped portion.

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53. (currently amended) A method in accordance with claim 51, wherein the received signal is first supplied to the adjustable chromatic dispersion device and emerges from said device exhibiting the combined effects of the chromatic dispersion exhibited by the optical path and the device, and the step of generating the chromatic dispersion signal comprises:

tapping off a portion of the received signal emerging from the adjustable chromatic dispersion device, and deriving the plurality of RF signals from the tapped portion.

54. (previously presented) A method in accordance with claim 53, further comprising the step of dithering the chromatic dispersion exhibited by the adjustable chromatic dispersion device.

55. (previously presented) A method in accordance with claim 54, comprising the step of using the chromatic dispersion signal in a feedback arrangement to control

the adjustable chromatic dispersion device to compensate for changes in the chromatic dispersion exhibited by said optical path.

56. (original) A method in accordance with claim 55, comprising the step of using a lock-in amplifier to detect the magnitude of a change in detected RF power at the dither frequency.

57. (currently amended) Apparatus for generating a chromatic dispersion signal indicative of the chromatic dispersion exhibited by an optical path along which an optical signal has been transmitted, the optical signal having been generated by a method comprising the modulation of an optical carrier with an RF data signal having frequency components across an RF data spectrum, such that data is carried by the optical signal in upper and lower sidebands on either side of an optical carrier frequency, the apparatus comprising:

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a photodetector arranged to detect at least a portion of the received optical signal and output a corresponding electrical signal;

~~at least one~~ a plurality of narrowband RF filters, each arranged to filter the electrical signal from the photodetector, and ~~the or~~ each filter having a passband within said RF data spectrum;

~~at least one~~ a plurality of RF power detectors, ~~the or~~ each detector being arranged to detect the filtered signal from ~~the or~~ a respective one of said filters and to produce a corresponding power signal indicative of a magnitude of the power of the detected filtered signal.

58. (original) Apparatus in accordance with claim 57, wherein the photodetector is a photodiode.

59. (original) Apparatus in accordance with claim 57, comprising three said RF filters having passbands centred on relative frequencies f, $\sqrt{2}$ f, and 2f respectively.

60. (original) Apparatus in accordance with claim 57, further comprising an optical filter arranged to filter the received optical signal before detection by the photodiode to remove optical frequencies outside the upper and lower sidebands.

61. (previously presented) An adjustable dispersion compensator comprising:

a module exhibiting adjustable chromatic dispersion and arranged to receive an optical data signal of the type defined in claim 57;

chromatic dispersion signal generating apparatus in accordance with claim 57, and

a controller arranged to control said module according to the power signal or signals to adjust the chromatic dispersion exhibited by the module to compensate at least partially for the dispersion of the optical path to the compensator.

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62. (previously presented) An adjustable dispersion compensator in accordance with claim 61 comprising a tap arranged before the adjustable chromatic dispersion module to tap off a portion of the optical signal received by the compensator, and wherein the photodetector is arranged to detect the tapped portion.

63. (previously presented) An adjustable dispersion compensator in accordance with claim 61 comprising a tap arranged to tap off a portion of the received optical signal emerging from the adjustable chromatic dispersion module, and wherein the photodetector is arranged to detect the tapped portion.

64. (previously presented) An adjustable dispersion compensator in accordance with claim 63 wherein the controller is arranged to dither the chromatic dispersion exhibited by the adjustable dispersion module.

65. (previously presented) An adjustable dispersion compensator in accordance with claim 64, comprising a feedback loop to track changes in the chromatic dispersion of the optical path to the compensator.

66. - 70. (Cancelled)